EXHIBIT 6

EXPERT REPORT OF ANDREW KVASNICKA

For the reasons set forth below, and based upon my review of information about the property at issue in this case located at 421 Brighton Knolls Drive, Brinklow, Maryland 20862 (the "Property"), including photographs of the Property and the red maple tree at issue, my knowledge of Line MB 26, my review of the documents and regulations described below, my education, training and 16 years of experience working with natural gas pipelines, I intend to offer the following opinions which are all held to a reasonable degree of engineering certainty:

(1) The Right of Way through the Property must be no less than fifty feet wide to be able to safely repair, replace, operate and maintain Line MB 26. This has been the case since the Right of Way was established.

(2) It is and was necessary for the inspection and safe maintenance, operation, repair and replacement of Line MB 26 that the encroaching red maple tree found on the Property and within the Right of Way be removed from the Right of Way. This has been the case since the Right of Way was established.

Basis and Reasons for Opinions

A. Required Width of the Right of Way is Fifty Feet

To safely access the pipeline for inspection, maintenance, repair or replacement of the pipeline, a width of 50 feet is required. In the event that access is needed to the pipeline for inspection, maintenance, repair or replacement, Columbia must excavate to a depth of 2 feet below the pipeline. Further, an area of at least three feet measured from each side of the pipeline is necessary to allow adequate access in the trench for pipeline repairs. The trench that will be excavated to provide access to the pipeline must be properly sloped to allow safe access and must also comply with the requirements of OSHA. As discussed below, a width of fifty feet is necessary to comply with the OSHA regulations and to have a sufficient area to access the pipeline and to perform any necessary inspections, repair, maintenance or replacement of the pipeline.

The depth of Line MB 26 as it runs through the Property averages 4 feet. The diameter of the MB 26 pipeline is approximately 26 inches. Following OSHA trenching guidelines it is possible to calculate the minimum width of the excavation at ground level necessary to expose and access Line MB 26. For planning purposes Type C soil as defined in 29 CFR 1926, Subpart P, section 1926.652(b)(1)(i) and (ii) is assumed because soil's testing is unnecessary if Type C soil is assumed and, for planning purposes, the worst case soil type is assumed. In the event of an emergency to access Line MB 26, there is no time for testing and delay to determine the soil type.

Assuming flat ground, as is present generally on the Property, and Type C soil, the OSHA regulations require a 1-1/2:1 slope from the bottom of the excavation. This would result in an opening at the top of the trench and centered on the pipeline of approximately 23.72 feet wide. *See* Exhibit 1 attached to this report. This is the minimum area needed to simply dig the trench or bell hole to access the pipeline. Additional space is required for the spoil (all excavated material) and for the work side, where trucks and all equipment will be operated. As shown on Exhibit 1, the spoil pile must be set back two feet from the trench for safety purposes and an area of 15 feet is needed for placement of the spoil. On the "work side," a minimum two foot setback is also needed for safety reasons and a ten foot wide area beyond that for trucks and other equipment. The total width needed to expose Line MB 26 and to have sufficient space to work is a minimum of 52.7 feet. This has been true since the time Line MB 26 was installed as dictated by safe sloping requirements, spoil area and work area requirements.

Additionally, because the subject pipeline is of critical importance to maintaining a continuous supply of natural gas to Virginia, Maryland, Pennsylvania and Washington, D.C., if repairs are needed gas must be able to continue to flow even during a repair. In the event that repair work cannot be performed while gas continues to flow through the subject portion of the pipeline, Columbia would also need to construct a temporary bypass line around the area to be repaired. This requires space to set stopples at each end of the section to be repaired, install pipe to each stopple and extend each pipe at least beyond the required 2 foot setback area along the top of the excavation and perpendicular to the line requiring repair, install 90 degree elbows, and finally install offset piping to complete the bypass connection around the section of pipe to be replaced. All of the bypass piping would typically be laid above ground. Therefore, the spoil pile is typically placed on the same side as the bypass pipe, and may be placed either between the ditch and the bypass pipe or pushed beyond the area in which the bypass pipe would be installed so as not to interfere with the construction of the bypass. The opposite side of the pipe to be replaced would then be used as the work side from which the excavators, stopple trucks, skid trucks, and welding trucks would work while excavating, setting stopples, cutting and lifting the old pipe out of the ditch, welding the new pipe together, inspecting coating, lowering the new pipe back into the same ditch, and making the final tie-ins to the existing pipe at both ends of the project. Installation of stopples and bypass piping will require another 5 feet of work space in addition to the minimum width of 52.7 feet described above. Total minimum width required for a repair requiring this type of stopple and bypass operation is 57.7 feet. If trucks and/or equipment would have to pass by each other on the work side of the excavation another 10 feet of space would be necessary. This increases the total area required from 57.7 feet to 67.7 feet, depending upon the repair procedure, the need for stopple and bypass, and the need for equipment to pass. Again this would be the minimum width required. Additional temporary work space may be required for emergency repairs or repairs that must be performed in adverse weather conditions.

Another emergency repair scenario that may dictate additional workspace would be night repair where portable light plants would be situated strategically so as to maximize light output over the work area, thereby making the area as safe as possible from a lighting perspective. There is also the possibility of snow removal being required before and during an emergency wintertime repair that could require additional space. Columbia is required under federal regulations to be prepared and able to address such scenarios.

B. The Encroaching Red Maple Tree Interferes With the Safe Operation, Maintenance and Inspection of Line MB 26

The encroaching red maple tree interferes with the required maintenance, operation, repair and inspections of Line MB 26. 49 CFR Part 192, Subpart L, section 192.613 requires continued surveillance of pipelines such as Facility Patrols (aircraft or walk) and Leakage Patrols with an instrument. It requires Columbia to continually survey for unusual operating and maintenance conditions.

49 CFR Part 192, Subpart M-Maintenance, sections 192.703-General, 192.705-Patrolling, and 192.706-Leakage Surveys, require that transmission line patrols and leakage surveys must be conducted and that unsafe conditions must be repaired promptly. 49 CFR Section 192.703(a) (No person may operate a segment of pipeline, unless it is maintained in accordance with this subpart). Section 192.705 specifically provides that each operator must have a patrol program to observe surface conditions on and adjacent to the Right of Way for indications of leaks, construction activity, and other factors affecting safety and operation. Patrols may be conducted by walking, driving or flying. In the event that an inspection identifies a concern with the

condition of a portion of the pipeline, Columbia may be required to visually inspect the pipeline. As described above, encroachments constitute an unreasonable interference that hinders Columbia's ability to excavate and conduct the visual inspection, when required.

49 CFR Part 192 mandates the safe operation of Natural Gas Pipelines. Columbia, being an Interstate Natural Gas Transmission operator, must comply with these regulations. 49 CFR Part 192 also requires each pipeline operator to have an Operating and Maintenance (O&M) Manual which must contain a written plan for Damage Prevention. See 49 CFR Part 192, Subpart L, section 192.614. Continued Surveillance is part of Columbia's Damage Prevention Program. 49 CFR Part 192, Subpart L, section 192.613 requires the pipeline operator to continually survey for unusual operating and maintenance conditions. Columbia uses a combination of foot patrols along with aerial patrols of both the rotary and fixed wing varieties, equipped with state-of-the art surveillance equipment to detect, record, and report leaks, third party activity, and geotechnical issues (including slips, washouts of streams, etc.). Encroachments also interfere with Columbia's ability to prevent third party damage to pipelines. Third party damage, caused by unauthorized excavation or activity within a pipeline operator's Right of Way, is the leading cause of pipeline incidents and, therefore, poses the greatest threat to public safety. 49 CFR Part 192, Subpart L, section 192.616(e) mandates the pipeline operator's responsibility to make certain the general public is aware of and educated as to the location of pipeline facilities. With the ever increasing population along pipeline Right of Ways comes increased construction and other activities that increase the threat of third party damage. The removal of encroachments provides a clear delineation of the Right of Way so as to alert persons in the vicinity of the pipelines to the presence of the pipelines and to deter conduct in the vicinity of the pipelines that is contrary to the safe maintenance and operation of the subject pipelines.

49 CFR Part 192, Subpart L, section 192.615(a)(7) requires companies to "make safe any actual or potential hazard to life or property." Removal of encroachments may be necessary for the safe repair of the pipeline. When encroachments exist, such as the tree in the present case, Columbia is delayed in accessing the pipeline by the time necessary to develop a plan for safely accessing the pipeline based on the presence of encroachments, the time necessary to obtain the equipment needed to safely remove the encroachments, and the time to execute the plan with the right equipment. Such delays can cause damage to person or property and/or a loss of supply of natural gas. Here, the tree would need to be removed before the trench could be dug, because – as described above – Columbia needs the full width of the easement in the event that it must repair or visually inspect the pipeline – and the tree is within five feet of the pipeline. The tree is within the width of the opening at the top of the trench that would need to be dug to enable visual inspection and/or repair of the pipeline. As described above, the opening at the top of the trench would be approximately 23.72 feet wide and centered on the pipeline. Additionally, because of the size, height and age of the tree, there would be substantial concern that roots from the tree could be wrapped around the pipeline. The time for planning and removal of the tree that were located in the Right of Way would take several days and would delay access to the pipeline in the event of a leak or an emergency. The tree substantially interferes with Columbia's ability to safely operate, repair, replace and maintain Line MB 26.

Requirements for Corrosion Control on pipelines are set forth in 49 CFR Part 192, Subpart I. It specifically prescribes minimum requirements for the protection of metallic pipelines from external, internal, and atmospheric corrosion. Sections 192.455 and 192.457 require that pipelines be cathodically protected. Section 192.463 requires a certain "level" of cathodic protection. Section 192.465 requires monitoring of these cathodic protection systems.

Monitoring requires periodic close-interval surveys which must be conducted on foot while carrying a heavy backpack with data collection equipment. 49 CFR Part 192, Subpart I, section 192.465(d) requires that "each operator shall take prompt remedial action to correct any deficiencies indicated by the monitoring." The cathodic protection system consists of the protective coating on the pipe and a low level electric current flowing to the pipeline anywhere there is a break in the coating. Current flowing onto the pipe helps prevent corrosion, thereby increasing the anticipated longevity of the pipelines. Removal of the tree from the Right of Way is important in protecting the cathodic protection system for Line MB 26. Tree roots can cause a break in some types of coatings and they can also shield the current from flowing onto the pipe; thereby rendering the cathodic protection deficient or inadequate at that specific location. The roots directly impact moisture content in the surrounding soil causing expansion and contraction which can stress and ultimately damage the coating. Removal of the tree from the Right of Way will allow unimpeded access to the right of way in the event that excavation becomes necessary. Additionally, removal of the tree will facilitate access for any needed maintenance. Managing the integrity of its gas pipeline system to provide incident-free operation is one of Columbia's primary goals. Columbia strives to provide safe and reliable delivery of natural gas to customers without adverse impacts on the public, customers, those working in and around the pipelines and the environment.

Facts and data considered

1. Documents and information identified in and attached to this report.
2. The Complaint filed by the Columbia and the Answer filed by Mr. and Mrs. Haas.
3. Initial Disclosures of the parties.
4. Discovery responses from Mr. and Mrs. Haas.

5. Documents produced by Columbia including photographs of the tree and the Property, and Columbia's Damage Prevention Program.

6. Discussions with Antonio Redd of Columbia Gas Transmission, LLC.

List of Publications in last ten years

None

Cases in which Mr. Kvasnicka testified as an expert at trial or deposition in the last 4 years

None

Qualifications

A copy of my current resume is attached hereto.

Compensation

I am a full time employee of Columbia Gas Transmission, LLC and am performing my duties as an expert witness as part of my job.

[signature]
Andrew Kvasnicka

Date: 8-14-17

Andy Kvasnicka
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akvasnicka@princegeorgecountyva.gov

Education:
Virginia Military Institute, B. S. Mechanical Engineering

U.S. Dept. of Transportation Safety Institute, Pipeline Safety Regulation

NACE, Internal Corrosion Technologist, Cathodic Protection Tester

Chesterfield County Police Academy, VA DCJS Law Enforcement Officer Certified

Experience: **Columbia Gas Transmission,** Prince George, VA
Pipeline Engineer (2005-2009, 2013-Present)

- Responsible for the VM system;
- Prepared blow down and purge plans;
- Utilized Pipeline Toolbox software to calculate gas lost, pipe stress, wheel load analysis, blasting analysis, and other engineering activities;
- Point of contact for technical services support for Operations;
- Utilized RSTRENG;
- Approved pipeline repairs;
- Performed Class Location change studies;
- Reviewed & approved or rejected 3rd party project plans;
- Supported Operations with PHMSA audits;
- Supported project managers;
- Participated with industry events.

Dominion Virginia Power, Richmond, VA
Underground Project Engineer (2010-2013)

- Scoped, planned, developed, specified material and estimated underground electric transmission projects;
- Assessed, inspected, and determined repair methods for high pressure fluid filled electric transmission facilities;
- Evaluated corrosion and developed remediation plans;
- Prepared energization plans.

Dominion Virginia Power, Richmond, VA
Right of Way Management Representative (2009-2010)

- Point of contact for developers, government agencies, and utility operators who needed to work in the transmission right of way;
- Reviewed, processed, and approved or denied encroachment request;
- Created, edited, proofed, & disseminated correspondence to 3rd parties;
- Attempted to facilitate amicable relationships with land owners;
- Searched court documents for right of way information.

Andy Kvasnicka **akvasnicka@princegeorgecountyva.gov**

Kinder-Morgan, Plantation Pipeline, Richmond, VA
O&M Specialist (2009-2009)

- Provided support to the Integrity Management Program (IMP) for the planning of pigging operations, reviewing smart pig data, providing technical recommendations and support for IMP digs;
- Monitored cathodic protection system;
- Monitored specific gravity of product to determine identity;
- Performed valve maintenance.

Local Emergency Planning Committee, Prince George, VA
Utilities Committee Chairman (2008-2009)

State Corporation Commission, Richmond, VA
Utilities Engineer (1997-2005)

- Enforced federal and state pipeline safety & underground utility regulations, 49 CFR 191-195;
- Conducted field inspections of pipeline systems;
- Investigated damages to underground utilities;
- Maintained computerized and conventional records of investigations & violations of the Code of Virginia;
- Appeared as staff witness testifying before the Commission.

PreCon, Incorporated, Petersburg, VA
Production Shift Supervisor (1996-1997)

- Coached production personnel to meet quality & production goals;
- Monitored work environment for safety, security & health concerns;
- Conducted quality assurance test to maintain product specifications;
- Mixed batch chemicals for use in manufacturing process.

Allied Signal, Incorporated, Hopewell, VA
Project Engineer (1991-1996)

- Performed initial project scope, justification, estimated & prepared appropriations request for funding of capital plant projects;
- Issued & administered construction contracts & purchase requisitions.

Prince George County Police Dept., Prince George, VA
Auxiliary Police Officer (1997-Present)

References available upon request

The illustration depicts approximate dimensions for excavation with 1½:1 slope for type C, unstable soil.

Soil Type	Slope Required
A	¾:1
B	1:1
C	1½:1

Ditch Profile

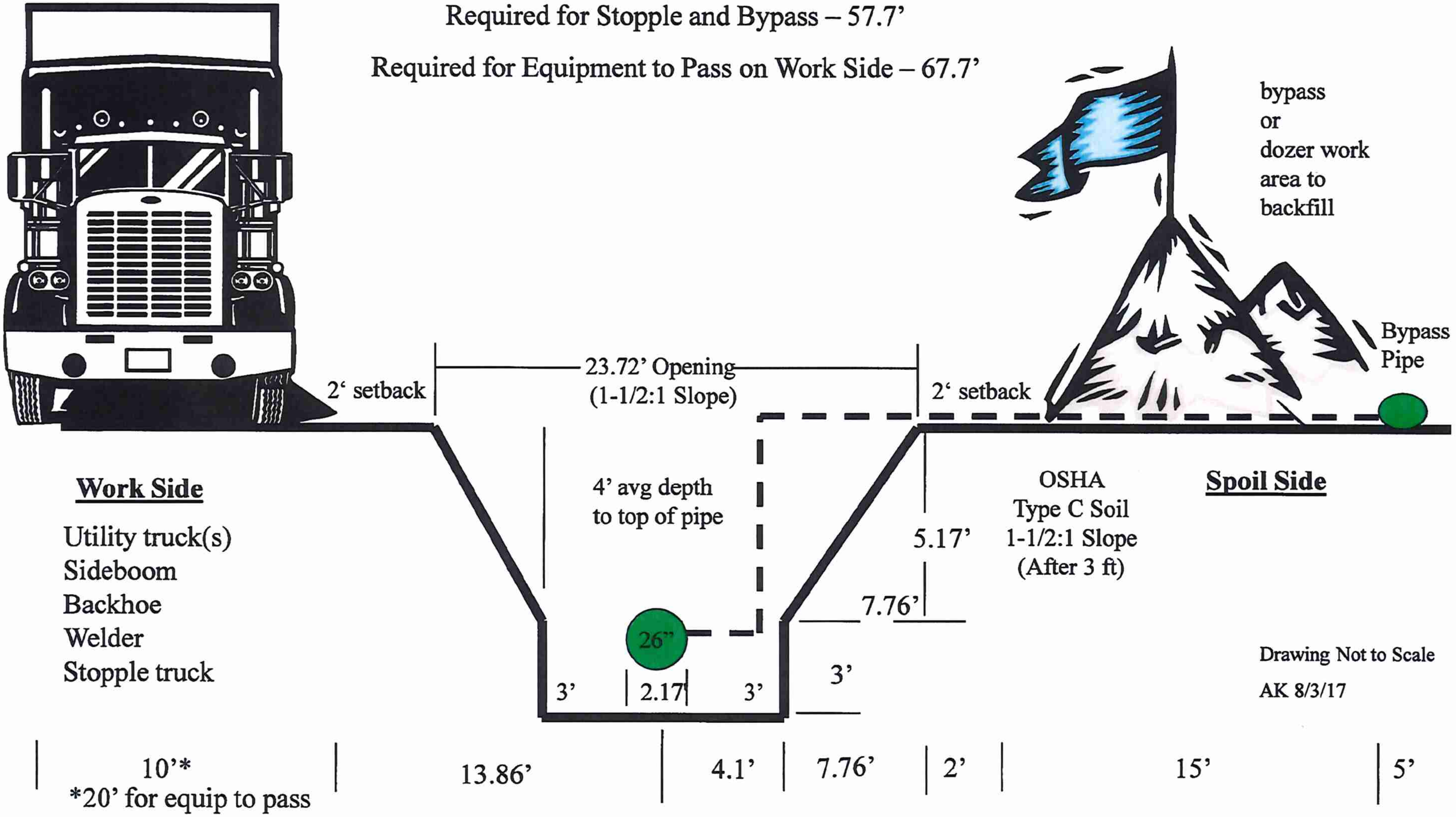
Pipeline MB – 26" Diameter

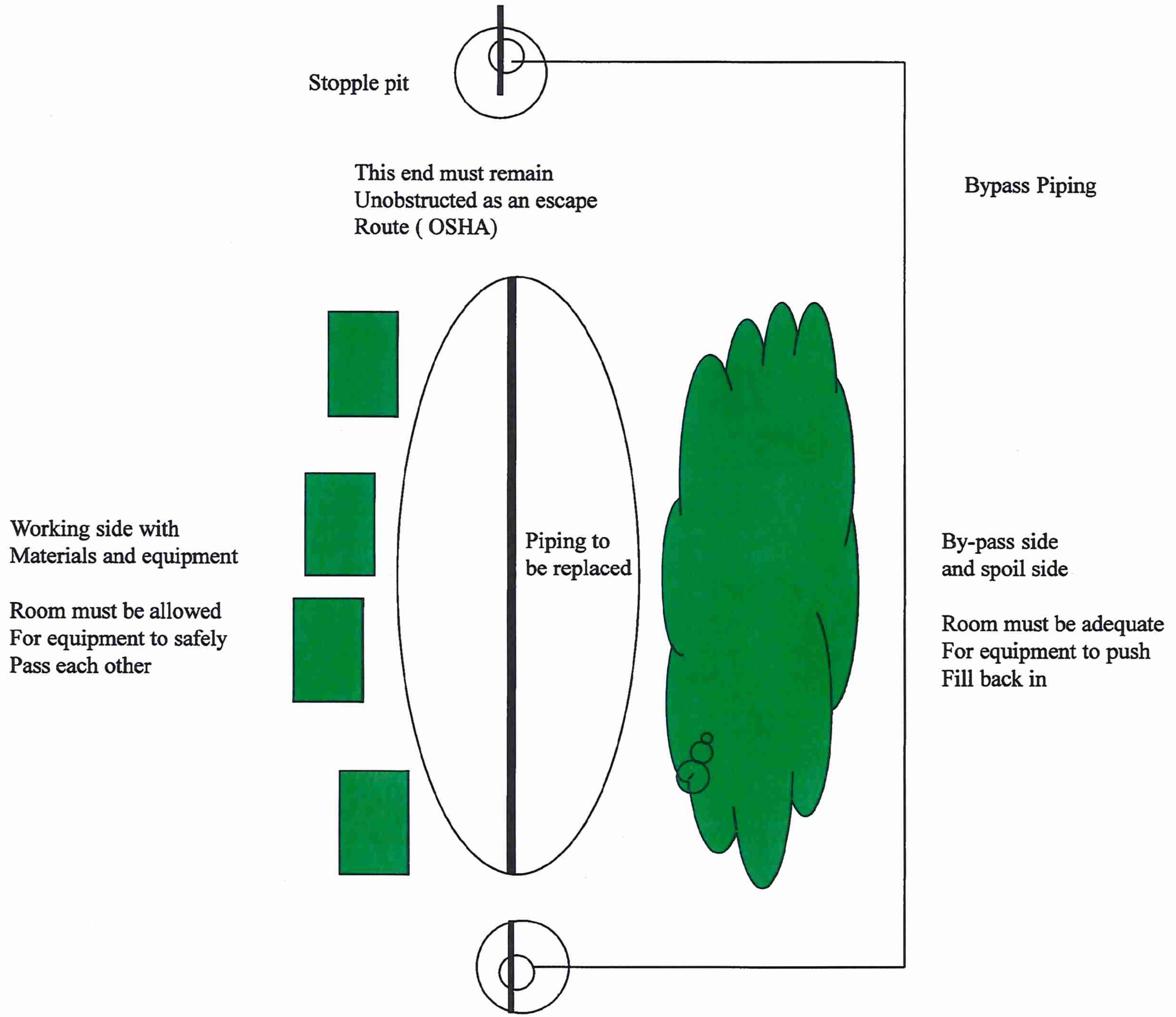
Example – 4' to Top of Pipe

Minimum Required Work Area – 52.7'

Required for Stopple and Bypass – 57.7'

Required for Equipment to Pass on Work Side – 67.7'


bypass
or
dozer work
area to
backfill
Bypass
Pipe
2' setback
23.72' Opening
(1-1/2:1 Slope)
2' setback
Work Side
Utility truck(s)
Sideboom
Backhoe
Welder
Stopple truck
4' avg depth
to top of pipe
26"
3'
2.17'
3'
5.17'
7.76'
3'
OSHA
Type C Soil
1-1/2:1 Slope
(After 3 ft)
Spoil Side
Drawing Not to Scale
AK 8/3/17
10'*
*20' for equip to pass
13.86'
4.1'
7.76'
2'
15'
5'


Stopple pit
This end must remain
Unobstructed as an escape
Route (OSHA)
Bypass Piping
Working side with
Materials and equipment
Room must be allowed
For equipment to safely
Pass each other
Piping to
be replaced
By-pass side
and spoil side
Room must be adequate
For equipment to push
Fill back in